Listing of claims

1 – 22 (cancelled)

23 (currently amended). A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian enzyme into the first cell; and

~~exposing the first and second cells *in vivo* or *in vitro* to conditions that inhibit the~~ unaltered mammalian enzyme but to which the altered mammalian enzyme is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian enzyme but is otherwise substantially identical or similar to the first cell.

24 (original). The method of claim 23, wherein the mammalian enzyme is a human enzyme.

25 (original). The method of claim 23, wherein the first and second cells are eukaryotic cells.

26 (original). The method of claim 24, wherein the first and second cells are eukaryotic cells.

27 (original). The method of claim 25, wherein the first and second cells are mammalian cells.

28 (original). The method of claim 26, wherein the first and second cells are mammalian cells.

29 (original). The method of claim 27, wherein the first and second cells are human cells.

30 (original). The method of claim 28, wherein the first and second cells are human cells.

31 (currently amended). A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian enzyme of a nucleotide biosynthesis pathway into the first cell; and

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exposing the first and second cells *in vivo* or *in vitro* to conditions that inhibit unaltered mammalian enzyme but to which the altered mammalian enzyme is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian enzyme but is otherwise substantially identical or similar to the first cell.

32 (original). The method of claim 31, wherein the mammalian enzyme is an enzyme of a purine nucleotide biosynthesis pathway.

33 (original). The method of claim 32, wherein the mammalian enzyme is a mammalian inosine monophosphate dehydrogenase (IMPDH).

34 (original). The method of claim 33, wherein the enzyme is a human IMPDH.

35 (original). The method of claim 33, wherein the IMPDH is selected from the group consisting of an IMPDH type I and an IMPDH type II.

36 (currently amended). The method of claim 33, wherein the IMPDH is an IMPDH type II and the conditions comprise exposure to an inhibitor of the IMPDH type II.

37 (currently amended). The method of claim 36, wherein the predominant IMPDH isoform expressed in the cells is the IMPDH type II.

38 (original). The method of claim 36, wherein the first and/or second cell is selected from the group consisting of lymphocytes, cancer cells, tumor cells, leukemic cells, proliferating cells, and mesangial cells.

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39 (original). The method of claim 38, wherein the first and/or second cell is a T-lymphocyte or B-lymphocyte.

40 (currently amended). The method of claim 39, wherein the cell or cells are activated prior to exposure to an inhibitor of the IMPDH type II.

41 (currently amended). The method of claim 39, wherein prior to exposure to an inhibitor of the IMPDH type II, the cells are exposed to one or more compositions selected from the group consisting of antigens, antibodies, cytokines, growth factors and mitogens.

42-49 (cancelled)

48 (currently amended). The method of claim 33, wherein the IMPDH is an IMPDH type II and the conditions comprise exposure to an inhibitor of the IMPDH ~~type~~ I.

49 (cancelled)

50 (currently amended). The method of claim 33, wherein the conditions comprise exposure to one or more inhibitors of the IMPDH and an inhibitor of a purine salvage pathway enzyme.

51 (original). The method of claim 33, wherein the conditions comprise exposure to mycophenolic acid or a derivative, analog or metabolite thereof.

52 (original). The method of claim 33, wherein the conditions comprise exposure to mycophenolate mofetil.

53 (original). The method of claim 33, further comprising introducing heterologous nucleic acid into the first cell in addition to the nucleic acid encoding an altered inosine monophosphate dehydrogenase enzyme.

54 (original). The method of claim 33, wherein the nucleic acid encoding an altered IMPDH is introduced into the first cell *in vitro*.

55 - 62 (cancelled)

63 (original). The method of claim 33, wherein the conditions additionally do not substantially affect cells that are not similar or identical to the first cell into which the nucleic acid encoding an altered IMPDH is introduced.

64 – 72 (cancelled)

73 (currently amended). The method of claim 34, wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 ~~and a glycine at amino acid position 191.~~

74 (currently amended). The method of claim 34, wherein the nucleic acid comprises the sequence of ~~nucleotides~~ nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of ~~nucleotides~~ nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the ~~nucleotides~~ nucleotide residues from #614-to #619 in SEQ. ID. No. 3; or the sequence of ~~nucleotides~~ nucleotide residues from #54-to #1595 of SEQ. ID. No. 40. ~~Figure 1~~

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75 – 80 (cancelled)

81 (original). The method of claim 33, wherein the first cell is a lymphocyte.

82 (currently amended). The method of claim 8134, wherein the lymphocyte ~~first cell~~ is a human T-lymphocyte or a human B-lymphocyte.

83 – 84 (cancelled)

85 (original). The. method of claim 33, wherein the conditions comprise exposure to one or more compositions selected from the group consisting of ribavirin, tiazofurin, 5-ethynyl-1-/3-D-ribofuranosylimidazole-4-carboxamide, mizoribine, selanazole-4-carboxamide adenine dinucleotide, pyridazines and VX-497.

86 – 140 (cancelled)

141 (currently amended). A method of providing a selective advantage for proliferation of a first cell relative to a second cell, comprising

introducing a nucleic acid molecule encoding an altered inosine monophosphate dehydrogenase (IMPDH) into the first cell; wherein the altered IMPDH is resistant to an inhibitor of purine biosynthesis; and the first cell is a mammalian cell;

contacting the first and second cells to the inhibitor;

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whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell and the second cell does not contain the altered IMPDH but is otherwise substantially identical or similar to the first cell.

142 (currently amended). The method of claim 141, wherein the nucleic acid molecule encodes the sequence of amino acids set forth in SEQ. ID. NO. 4 or the sequence of amino acids set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191 .

143 (currently mended). The method of claim 141, wherein the nucleic acid molecule comprises the sequence of ~~nucleotides~~ nucleotide residues from # 48 to #

1589 in SEQ. ID. NO. 3; the sequence of ~~nucleotides~~ nucleotide residues from # 48 to # 1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the ~~nucleotides~~ nucleotide residues from # 614 ~~to~~ # 619 in SEQ ID. No. 3; or the sequence of ~~nucleotides~~ nucleotide residues from #54 ~~to~~ # 1595 of SEQ ID. No. 40.

144 – 165 (cancelled).

166 (new) The method of claim 141 wherein the mammalian cell is a human cell.

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167 (new) The method of claim 141 wherein the mammalian cell is selected from the group consisting of a lymphocyte, a cancer cell, a tumor cell, a leukemic cell, a proliferating cell, and a mesangial cell.

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168 (new) The method of claim 141 wherein the mammalian cell is a T-lymphocyte or a B-lymphocyte.

169 (new) The method of claim 141 wherein the inhibitor is mycophenolic acid or a derivative, analog or metabolite thereof.

170 (new). The method of claim 141, wherein the inhibitor is mycophenolate mofetil.

171 (new) The method of claim 141 wherein the inhibitor is selected from the group consisting of ribavirin, tiazofurin, 5-ethynyl-1-/3-D-ribofuranosylimidazole-4-carboxamide (EICAR), mizoribine, selanazole-4-carboxamide adenine dinucleotide, pyridazines and VX-497.

172 (new). A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered form of an mammalian enzyme of a nucleotide biosynthesis pathway into the first cell; and

contacting the first and second cells with an inhibitor of an unaltered form of the mammalian enzyme but to which the altered form is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered form of the mammalian enzyme but is otherwise substantially identical or similar to the first cell.

173 (new). The method of claim 172, wherein the nucleotide biosynthesis pathway is a purine nucleotide biosynthesis pathway.

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174 (new). The method of claim 172, wherein the mammalian enzyme is a mammalian inosine monophosphate dehydrogenase (IMPDH).

175 (new). The method of claim 172, wherein the mammalian enzyme is a human IMPDH.

176 (new). The method of claim 174, wherein the IMPDH is selected from the group consisting of an IMPDH type I and an IMPDH type II.

177 (new). The method of claim 174 wherein the IMPDH is an IMPDH type II and the inhibitor is an inhibitor of the IMPDH.

178 (new). The method of claim 177, wherein the predominant IMPDH isoform expressed in the first and second cells is the IMPDH type II.

179 (new). The method of claim 172, wherein the first and/or second cell is a mammalian cell.

180 (new) The method of claim 179 wherein the mammalian cell is a human cell.

181 (new) The method of claim 179 wherein the mammalian cell is selected from the group consisting of a lymphocyte, a cancer cell, a tumor cell, a leukemic cell, a proliferating cell, and a mesangial cell.

182 (new). The method of claim 179 wherein the mammalian cell is a T-lymphocyte or a B-lymphocyte.

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183 (new). The method of claim 172 wherein the first and/or second cell is activated prior to contacting with the inhibitor.

184 (new). The method of claim 172 wherein prior to contacting with the inhibitor the first and/or second cell is contacted with one or more compositions selected from the group consisting of antigens, antibodies, cytokines, growth factors and mitogens.

185 (new) The method of claim 174, wherein the inhibitor is mycophenolic acid or a derivative, analog or metabolite thereof.

186 (new). The method of claim 174, wherein the inhibitor is mycophenolate mofetil.

187 (new) The method of claim 174 wherein the inhibitor is selected from the group consisting of ribavirin, tiazofurin, 5-ethynyl-1-/3-D-ribofuranosylimidazole-4-carboxamide (EICAR), mizoribine, selanazole-4-carboxamide adenine dinucleotide, pyridazines and VX-497.

188 (new) The method of claim 172, wherein the nucleic acid is introduced into the first cell *in vitro* or *in vivo*.

189 (new). The method of claim 172, wherein the inhibitor additionally does not substantially affect a third cell that is not similar or identical to the first cell into which the nucleic acid encoding the altered form is introduced.

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190 (new) The method of claim 175, wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

191 (new). The method of claim 175, wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

192 (new) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell; and

contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell.

193 (new). The method of claim 192, wherein the mammalian IMPDH is a human IMPDH.

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194 (new). The method of claim 192, wherein the mammalian IMPDH is selected from the group consisting of an IMPDH type I and an IMPDH type II.

195 (new). The method of claim 194 wherein the mammalian IMPDH is an IMPDH type II and the inhibitor is an inhibitor of the mammalian IMPDH.

196 (new). The method of claim 192, wherein the first and/or second cell is a mammalian cell.

197 (new) The method of claim 196 wherein the mammalian cell is a human cell.

198 (new) The method of claim 196 wherein the mammalian cell is selected from the group consisting of a lymphocyte, a cancer cell, a tumor cell, a leukemic cell, a proliferating cell, and a mesangial cell.

199 (new). The method of claim 196 wherein the mammalian cell is a T-lymphocyte or a B-lymphocyte.

200 (new). The method of claim 192 wherein the first and/or second cell is activated prior to contacting with the inhibitor.

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201 (new). The method of claim 192 wherein prior to contacting with the inhibitor the first and/or second cell is contacted with one or more compositions selected from the group consisting of antigens, antibodies, cytokines, growth factors and mitogens.

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202 (new) The method of claim 192, wherein the inhibitor is mycophenolic acid or a derivative, analog or metabolite thereof.

203 (new). The method of claim 192, wherein the inhibitor is mycophenolate mofetil.

204 (new) The method of claim 192 wherein the inhibitor is selected from the group consisting of ribavirin, tiazofurin, 5-ethynyl-1-/3-D-ribofuranosylimidazole-4-carboxamide (EICAR), mizoribine, selanazole-4-carboxamide adenine dinucleotide, pyridazines and VX-497.

205 (new) The method of claim 192, wherein the nucleic acid encoding the altered form of IMPDH is introduced into the first cell *in vitro* or *in vivo*.

206 (new) The method of claim 193, wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

207 (new). The method of claim 193, wherein the nucleic acid comprises the ~~sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3;~~ the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

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208 (new) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a human cell; and

contacting the first and second cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first cell.

209 (new). The method of claim 208, wherein the human IMPDH is selected from the group consisting of an human IMPDH type I and a human IMPDH type II.

210 (new). The method of claim 209 wherein the human IMPDH is a human IMPDH type II and the inhibitor is an inhibitor of the human IMPDH.

211 (new). The method of claim 208 wherein the human cell is selected from the group consisting of a lymphocyte, a cancer cell, a tumor cell, a leukemic cell, a proliferating cell, and a mesangial cell.

212 (new). The method of claim 208 wherein the human cell is a T-lymphocyte or a B-lymphocyte.

213 (new). The method of claim 208 wherein the first and/or second cell is activated prior to contacting with the inhibitor.

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214 (new). The method of claim 208 wherein prior to contacting with the inhibitor the first and/or second cell is contacted with one or more compositions selected from the group consisting of antigens, antibodies, cytokines, growth factors and mitogens.

215 (new) The method of claim 208, wherein the inhibitor is mycophenolic acid or a derivative, analog or metabolite thereof.

216 (new). The method of claim 208, wherein the inhibitor is mycophenolate mofetil.

217 (new) The method of claim 208 wherein the inhibitor is selected from the group consisting of ribavirin, tiazofurin, 5-ethynyl-1-/3-D-ribofuranosylimidazole-4-carboxamide (EICAR), mizoribine, selanazole-4-carboxamide adenine dinucleotide, pyridazines and VX-497.

218 (new) The method of claim 208, wherein the nucleic acid encoding the altered human IMPDH is introduced into the first cell *in vitro* or *in vivo*.

219 (new) The method of claim 208, wherein the nucleic acid encodes the ~~amino acid sequence set forth in SEQ. ID. NO. 4 or~~ the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

220 (new). The method of claim 208, wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614-619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54-1595 of SEQ. ID. No. 40.

221 (new) The method of claim 208 wherein the first and second cells are contacted with the inhibitor *in vivo*.

222 (new) The method of claim 208 wherein the first and second cells are contacted with the inhibitor *in vitro*.

223 (new) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first cell; and

contacting the first and second cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first cell.

224 (new). The method of claim 223, wherein the human IMPDH is selected from the group consisting of an human IMPDH type I and a human IMPDH type II.

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225 (new). The method of claim 224 wherein the human IMPDH is a human IMPDH type II and the inhibitor is an inhibitor of the human IMPDH.

226 (new). The method of claim 223 wherein the first and/or the second cell is a mammalian cell.

227 (new) The method of claim 226 wherein the mammalian cell is a human cell.

228 (new) The method of claim 226 wherein the mammalian cell is selected from the group consisting of a lymphocyte, a cancer cell, a tumor cell, a leukemic cell, a proliferating cell, and a mesangial cell.

229 (new). The method of claim 236 wherein the mammalian cell is a T-lymphocyte or a B-lymphocyte.

230 (new) The method of claim 223, wherein the inhibitor is mycophenolic acid or a derivative, analog or metabolite thereof.

231 (new). The method of claim 223, wherein the inhibitor is mycophenolate mofetil.

232 (new) The method of claim 223 wherein the inhibitor is selected from the group consisting of ribavirin, tiazofurin, 5-ethynyl-1-/3-D-ribofuranosylimidazole-4-carboxamide (EICAR), mizoribine, selanazole-4-carboxamide adenine dinucleotide, pyridazines and VX-497.

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233 (new) The method of claim 223, wherein the nucleic acid encoding the altered human IMPDH is introduced into the first cell *in vitro* or *in vivo*.

234 (new) The method of claim 223, wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

235 (new). The method of claim 223, wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

236 (new) The method of claim 223 wherein the first and second cells are contacted with the inhibitor *in vivo* and/or *in vitro*.

~~237 (new) A method of providing for selective proliferation, viability or~~ proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a mammalian cell; and

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contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell.

238 (new). The method of claim 237, wherein the mammalian IMPDH is a human IMPDH.

239 (new). The method of claim 237, wherein the mammalian IMPDH is selected from the group consisting of an IMPDH type I and an IMPDH type II.

240 (new). The method of claim 239 wherein the mammalian IMPDH is an IMPDH type II and the inhibitor is an inhibitor of the mammalian IMPDH.

241 (new). The method of claim 237, wherein the mammalian cell is a human cell.

242 (new) The method of claim 237 wherein the mammalian cell is selected from the group consisting of a lymphocyte, a cancer cell, a tumor cell, a leukemic cell, a proliferating cell, and a mesangial cell.

243 (new). The method of claim 237 wherein the mammalian cell is a T-lymphocyte or B-lymphocyte.

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244 (new) The method of claim 237, wherein the inhibitor is mycophenolic acid or a derivative, analog or metabolite thereof.

245 (new). The method of claim 237, wherein the inhibitor is mycophenolate mofetil.

246 (new) The method of claim 237 wherein the inhibitor is selected from the group consisting of ribavirin, tiazofurin, 5-ethynyl-1-/3-D-ribofuranosylimidazole-4-carboxamide (EICAR), mizoribine, selanazole-4-carboxamide adenine dinucleotide, pyridazines and VX-497.

247 (new) The method of claim 237, wherein the nucleic acid encoding the altered form of the mammalian IMPDH is introduced into the first cell *in vitro* or *in vivo*.

248 (new) The method of claim 238, wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

249 (new). The method of claim 238, wherein the nucleic acid comprises the ~~sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3, the sequence of~~ nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

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250 (new) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a human cell; and

contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell.

251 (new). The method of claim 250, wherein the mammalian IMPDH is a human IMPDH.

252 (new). The method of claim 250, wherein the mammalian IMPDH is selected from the group consisting of an IMPDH type I and an IMPDH type II.

253 (new). The method of claim 252 wherein the mammalian IMPDH is an IMPDH type II and the inhibitor is an inhibitor of the mammalian IMPDH.

254 (new). The method of claim 250, wherein the human cell is selected from the group consisting of a lymphocyte, a cancer cell, a tumor cell, a leukemic cell, a proliferating cell, and a mesangial cell.

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255 (new). The method of claim 250 wherein the human cell is a T-lymphocyte or B-lymphocyte.

256 (new) The method of claim 250, wherein the inhibitor is mycophenolic acid or a derivative, analog or metabolite thereof.

257 (new). The method of claim 250, wherein the inhibitor is mycophenolate mofetil.

258 (new) The method of claim 250 wherein the inhibitor is selected from the group consisting of ribavirin, tiazofurin, 5-ethynyl-1-/3-D-ribofuranosylimidazole-4-carboxamide (EICAR), mizoribine, selanazole-4-carboxamide adenine dinucleotide, pyridazines and VX-497.

259 (new) The method of claim 250, wherein the nucleic acid encoding the altered form of IMPDH is introduced into the first cell *in vitro* or *in vivo*.

260 (new) The method of claim 251, wherein the nucleic acid encodes the ~~amino acid sequence set forth in SEQ. ID. NO. 4 or~~ the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

261 (new). The method of claim 251, wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

262 (new). A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian enzyme into the first cell; and

contacting the first and second cells with a inhibitor that inhibits the unaltered mammalian enzyme but to which the altered mammalian enzyme is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian enzyme but is otherwise substantially identical or similar to the first cell.

263 (new). The method of claim 262, wherein the mammalian enzyme is a human enzyme.

264 (new). The method of claim 263, wherein the first and second cells are eukaryotic cells.

265 (new). The method of claim 264, wherein the first and second cells are mammalian cells.

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266 (new). The method of claim 265, wherein the first and second cells are human cells.

267 (new). The method of claim 261, wherein the first and second cells are eukaryotic cells.

268 (new). The method of claim 267, wherein the first and second cells are mammalian cells.

269 (new). The method of claim 268, wherein the first and second cells are human cells.